



**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Application No.: 10/787,060  
Filing Date: February 25, 2004  
Applicant: Akiyoshi AOYAGI  
Group Art Unit: 2818  
Examiner: Thinh T. Nguyen  
Title: SEMICONDUCTOR DEVICE, ELECTRONIC DEVICE,  
ELECTRONIC APPARATUS, METHOD FOR  
MANUFACTURING A SEMICONDUCTOR DEVICE, AND  
METHOD FOR MANUFACTURING AN ELECTRONIC  
DEVICE  
Attorney Docket: 9319S-000659

---

Director of the United States Patent and Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450

**SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT**

Sir:

Pursuant to 37 C.F.R. §§ 1.56, 1.97 and 1.98, Applicant hereby submits an Information Disclosure Statement for consideration by the Examiner.

I. **LIST OF PATENTS, PUBLICATIONS, AND OTHER INFORMATION**

The patents, publications and other information requested to be considered by the Office (except unpublished U.S. patent applications) are listed on Form 1449 attached hereto.

II. **COPIES**

A.  Submitted herewith is a legible copy of (i) each foreign patent; (ii) each publication or that portion which caused it to be listed, other than U.S. patents and U.S. patent application publications unless required by the Office; (iii) each unpublished U.S. application listed below in Section IV (i.e., including the specification, claims, and any drawing of the application, or that portion of the application which caused it to be listed, including any claims directed to that portion), except for such applications filed on or after June 30, 2003, pursuant to the Waiver of the Copy Requirement in 37 C.F.R. 1.98 (OG Notice dated October 19, 2004); and (iv) all other information or that portion which caused it to be listed.

B.  Any patents, publications or other information which are listed on Form 1449 or on the copies of PTO-892, but which are not enclosed herewith, were previously cited by or submitted to the PTO in one of the following applications which has been relied upon for an earlier filing date under 35 U.S.C. § 120:

U.S. Serial Number

U.S. Filing Date

C.  This is a PCT application in the entry of the National Phase in the United States. A copy of the International Search Report is attached for the Examiner's information. The documents listed on the International Search report are listed on the attached Form 1449 for consideration by the Examiner and for listing on any patent resulting from this application. If the International Search report was from the US, EPO, or JPO search authorities, copies of these references should have been supplied to the USPTO under the trilateral agreement and are believed to be in the file of the above-identified application. (MPEP 1893.03(g).)

III. CONCISE EXPLANATION OF THE RELEVANCE (check at least one box)

A.  Except as may be indicated below in (B), all of the patents, publications or other information are in the English language (concise explanation not required).

B.  A concise explanation of the relevance of each patent, publication or other information listed that is not in the English language is as follows (see 37 C.F.R. § 1.98(a)(3)):

1.  See the attached foreign patent office communication from a counterpart foreign application.
2.  English translations are provided: as indicated on the attached Form HDP-1499.
3.  Other:

C.  The following additional information is provided for the Examiner's consideration.

IV. CROSS REFERENCE TO RELATED APPLICATION(S)

A.  The Examiner is advised that the following co-pending application(s) contain(s) subject matter that may be related to the present application. By bringing this(these) application(s) to the Examiner's attention, Applicant(s) does (do) not waive the confidentiality provisions of 35 U.S.C. § 122.

Serial No.

Filing Date

Art Unit

V. THIS IDS IS BEING FILED UNDER

A.  **37 C.F.R. § 1.97(b):** (check only one box)

1.  within three months of the filing date of a national application other than a continued prosecution application under § 1.53(d) (37 C.F.R. § 1.97(b)(1)). No fee or certification is required.
2.  within three months of the date of entry of the national stage as set forth in § 1.491 in an international application (37 C.F.R. § 1.97(b)(2)). No fee or certification is required.
3.  before the mailing of a first Office Action on the merits (37 C.F.R. § 1.97(b)(3)). No fee or certification is required. In the event that a first Office Action on the merits has been issued, please consider this IDS under 37 C.F.R. § 1.97(c) and see the certification under 37 C.F.R. § 1.97(e) below; or, if no certification has been made, charge our deposit account a fee in the amount of \$180.00 as required by 37 C.F.R. § 1.17(p).
4.  before the mailing of a first Office Action after the filing of a request for continued examination under 37 C.F.R. § 1.114. No fee or certification is required.

B.  **37 C.F.R. § 1.97(c):** (check only one box)

before the mailing date of either any Final Office Action under 37 C.F.R. § 1.113, a Notice of Allowance under 37 C.F.R. § 1.311, or an action that otherwise closes prosecution.

1.  No certification; therefore, a fee in the amount of \$180.00 is required by 37 C.F.R. § 1.17(p).
2.  See the certification below. No fee is required.

C.  **37 C.F.R. § 1.97(d):**

after the mailing date of either a Final Office Action under 37 C.F.R. § 1.113 or a Notice of Allowance under 37 C.F.R. § 1.311, yet on or before payment of the issue fee.

1.  See the certification below. A fee in the amount of \$180.00 is required by 37 C.F.R. § 1.17(p).

VI. CERTIFICATION UNDER 37 C.F.R. § 1.97(e): (check only one box)

The undersigned hereby certifies that:

- A.  each item of information contained in this IDS was first cited in a communication from a foreign patent office in a counterpart foreign application

not more than three months prior to the filing of this IDS (See 37 C.F.R. § 1.97(e)(1)). See further statement under 37 C.F.R. 1.704(d) below in section VII, if applicable; or

B.  no item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this IDS was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this IDS (See 37 C.F.R. § 1.97(e)(2)).

C.  some of the items of information were first cited in a communication from a foreign patent office. As to this information, the undersigned hereby certifies that each item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS. As to the remaining information, the undersigned hereby certifies that no item of this remaining information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this IDS was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this IDS.

VII. STATEMENT UNDER 37 C.F.R. 1.704(d)

The undersigned hereby states that:

each item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this IDS.

VIII. PAYMENT OF FEES (check only one box)

A.  A check in the amount of \$180.00 is enclosed for the above identified fee.

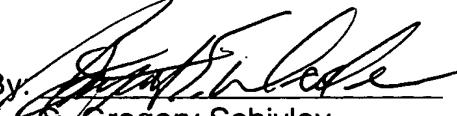
B.  Please charge Deposit Account No. 50-3213 in the amount of \$180.00 for the above-indicated fee. A duplicate copy of this paper is attached.

The above references are being cited only in the interest of candor and without any admission that they constitute statutory prior art, contain matter which anticipates the invention, or which would render the same obvious, either singly or in combination, to a person of ordinary skill in the art. Furthermore, this Information Disclosure Statement shall not be construed as a representation that a search has been made.

If it is determined that this IDS has been filed under the wrong rule, the PTO is requested to consider this IDS under the proper rule (with a petition if necessary) and charge the appropriate fee to Deposit Account No. 50-3213.

Please charge any additional fees or credit any overpayment pursuant to 37 C.F.R. § 1.16 or § 1.17 to Deposit Account No. 50-3213.

Respectfully submitted,

By:   
G. Gregory Schivley  
Reg. No. 27,382  
Bryant E. Wade  
Reg. No. 40,344

Dated: July 28, 2005

Harness, Dickey & Pierce, P.L.C.  
P.O. Box 828  
Bloomfield Hills, Michigan 48303  
(248) 641-1600

GGS/BEW/jmz



FORM HDP-1449 (Based on Form PTO-1449)

**PATENT AND TRADEMARK OFFICE  
INFORMATION DISCLOSURE CITATION**  
(Use several sheets if necessary)

Sheet 1 of 1

|                     |            |
|---------------------|------------|
| ATTORNEY DOCKET No. | SERIAL No. |
| 9319S-000659        | 10/787,060 |
| APPLICANT           |            |
| Akiyoshi AOYAGI     |            |
| FILING DATE         | GROUP      |
| February 25, 2004   | 2818       |

**U.S. PATENT DOCUMENTS**

| Ref. Desig. | Examiner's Initials | Document Number | Date    | Name              | Class/Subclass | (If appropriate) Filing Date |
|-------------|---------------------|-----------------|---------|-------------------|----------------|------------------------------|
| 1.          |                     | 6,882,232       | 4/2005  | Harima, Hidenori  |                |                              |
| 2.          |                     | 6,781,241       | 8/2004  | Nishimura, et al. |                |                              |
| 3.          |                     | 6,774,467       | 8/2004  | Horiuchi, et al.  |                |                              |
| 4.          |                     | 2004/0135243    | 7/2004  | Aoyagi, Akiyoshi  |                |                              |
| 5.          |                     | 6,586,832       | 7/2003  | Shibata, et al.   |                |                              |
| 6.          |                     | 6,507,098       | 1/2003  | Lo, et al.        |                |                              |
| 7.          |                     | 2003/0022465    | 1/2003  | Wachtler, Kurt P. |                |                              |
| 8.          |                     | 6,461,881       | 10/2002 | Farnworth, et al. |                |                              |
| 9.          |                     | 6,442,026       | 8/2002  | Yamaoka, Yoji     |                |                              |
| 10.         |                     | 6,404,049       | 6/2002  | Shibamoto, et al. |                |                              |
| 11.         |                     | 2002/0079568    | 6/2002  | Degani, et al.    |                |                              |
| 12.         |                     | 6,369,444       | 4/2002  | Degani, et al.    |                |                              |
| 13.         |                     | 2001/0015488    | 8/2001  | Akram, et al.     |                |                              |
| 14.         |                     | 6,239,383       | 5/2001  | Lin, Patrick      |                |                              |
| 15.         |                     | 6,122,171       | 9/2000  | Akram, et al.     |                |                              |
| 16.         |                     | 5,973,392       | 10/1999 | Senba, et al.     |                |                              |
| 17.         |                     | 5,834,848       | 11/1998 | Iwasaki, Ken      |                |                              |
| 18.         |                     | 5,120,678       | 6/1992  | Moore, et al.     |                |                              |

**FOREIGN PATENT DOCUMENTS**

| Ref. Desig. | Examiner's Initials | Document Number | Date | Country | Class/Subclass | Translation * Yes | No |
|-------------|---------------------|-----------------|------|---------|----------------|-------------------|----|
| 1.          |                     |                 |      |         |                |                   |    |

Examiner:

Date Considered:

EXAMINER: Please initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



7-29-05

PTO/SB/21 (04-04)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

JFW  
48

## TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

|  |  |                        |                   |
|--|--|------------------------|-------------------|
|  |  | Application Number     | 10/787,060        |
|  |  | Filing Date            | February 25, 2004 |
|  |  | First Named Inventor   | Akiyoshi AOYAGI   |
|  |  | Art Unit               | 2818              |
|  |  | Examiner Name          | Thinh T. Nguyen   |
| Total Number of Pages in This Submission |  | Attorney Docket Number | 9319S-000659      |

### ENCLOSURES (check all that apply)

|   |  |  |         |  |
|---|--|--|---------|--|
| <input checked="" type="checkbox"/> Fee Transmittal Form<br><br><input type="checkbox"/> Fee Attached   | <input type="checkbox"/> Drawing(s)<br><br><input type="checkbox"/> Licensing-related Papers<br><br><input type="checkbox"/> Petition<br><br><input type="checkbox"/> Petition to Convert to a Provisional Application<br><br><input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address<br><br><input type="checkbox"/> Terminal Disclaimer<br><br><input type="checkbox"/> Request for Refund<br><br><input type="checkbox"/> CD, Number of CD(s) _____ | <input type="checkbox"/> After Allowance Communication to Technology Center (TC)<br><br><input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences<br><br><input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)<br><br><input type="checkbox"/> Proprietary Information<br><br><input type="checkbox"/> Status Letter<br><br><input type="checkbox"/> Other Enclosure(s) (please identify below):<br><br><b>Form 1449; Acknowledgement Postcard</b> |         |  |
| <input type="checkbox"/> Amendment / Reply<br><br><input type="checkbox"/> After Final<br><br><input type="checkbox"/> Affidavits/declaration(s)<br><br><input type="checkbox"/> Extension of Time Request<br><br><input type="checkbox"/> Express Abandonment Request<br><br><input checked="" type="checkbox"/> Information Disclosure Statement<br><br><input type="checkbox"/> Certified Copy of Priority Document(s)<br><br><input type="checkbox"/> Response to Missing Parts/ Incomplete Application<br><br><input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53 |  | <table border="1"><tr><td>Remarks</td><td>The Commissioner is hereby authorized to charge any additional fees that may be required under 37 CFR 1.16 or 1.17 to Deposit Account No. 50-3213 (Epson R &amp; D). A duplicate copy of this sheet is enclosed.</td></tr></table>   | Remarks | The Commissioner is hereby authorized to charge any additional fees that may be required under 37 CFR 1.16 or 1.17 to Deposit Account No. 50-3213 (Epson R & D). A duplicate copy of this sheet is enclosed. |
| Remarks   | The Commissioner is hereby authorized to charge any additional fees that may be required under 37 CFR 1.16 or 1.17 to Deposit Account No. 50-3213 (Epson R & D). A duplicate copy of this sheet is enclosed.   |  |         |  |

### SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

|                         |                                  |  |                              |
|-------------------------|----------------------------------|--|------------------------------|
| Firm or Individual name | Harness, Dickey & Pierce, P.L.C. | Attorney Name<br>G. Gregory Schivley<br>Bryant E. Wade | Reg. No.<br>27,382<br>40,344 |
| Signature               |                                  |  |                              |
| Date                    | July 28, 2005                    |  |                              |

### CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.

|                       |                                    |                        |                   |
|-----------------------|------------------------------------|------------------------|-------------------|
| Typed or printed name | G. Gregory Schivley Bryant E. Wade | Express Mail Label No. | EV 570 164 659 US |
| Signature             |                                    | Date                   | July 28, 2005     |

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

EV 570 164 659 US



# FEE TRANSMITTAL for FY 2005

Effective 10/01/2004. Patent fees are subject to annual revision.

Applicant claims small entity status. See 37 CFR 1.27

**TOTAL AMOUNT OF PAYMENT**

(\$)

180

| Complete if Known    |                   |
|----------------------|-------------------|
| Application Number   | 10/787,060        |
| Filing Date          | February 25, 2004 |
| First Named Inventor | Akiyoshi AOYAGI   |
| Examiner Name        | Thinh T. Nguyen   |
| Art Unit             | 2818              |
| Attorney Docket No.  | 9319S-000659      |

## METHOD OF PAYMENT (check all that apply)

Check  Credit card  Money  Other  None  
Order

Deposit Account:

Deposit  
Account  
Number

50-3213

Deposit  
Account  
Name

Epson R & D

The Director is authorized to: (check all that apply)

Charge fee(s) indicated below  Credit any overpayments  
 Charge any additional fee(s) during the pendency of this application  
 Charge fee(s) indicated below, except for the filing fee  
to the above-identified deposit account.

## FEE CALCULATION

### 1. BASIC FILING FEE

| Large Entity | Small Entity |
|--------------|--------------|
|--------------|--------------|

| Fee Code | Fee (\$) | Fee Code | Fee (\$) | Fee Description        | Fee Paid |
|----------|----------|----------|----------|------------------------|----------|
| 1011     | 300      | 2011     | 150      | Utility filing fee     |          |
| 1012     | 200      | 2012     | 100      | Design filing fee      |          |
| 1013     | 200      | 2013     | 100      | Plant filing fee       |          |
| 1014     | 300      | 2014     | 150      | Reissue filing fee     |          |
| 1005     | 200      | 2005     | 100      | Provisional filing fee |          |

SUBTOTAL (1)

(\$)

0

### 2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

| Total Claims       | -20 ** | = | 0 | X | Fee from below | Fee Paid |
|--------------------|--------|---|---|---|----------------|----------|
| Independent Claims | -3 **  | = | 0 | X |                |          |
| Multiple Dependent |        |   |   |   |                |          |

| Large Entity | Small Entity |
|--------------|--------------|
|--------------|--------------|

| Fee Code | Fee (\$) | Fee Code | Fee (\$) | Fee Description  |
|----------|----------|----------|----------|--|
| 1202     | 50       | 2202     | 25       | Claims in excess of 20                                     |
| 1201     | 200      | 2201     | 100      | Independent claims in excess of 3                          |
| 1203     | 360      | 2203     | 180      | Multiple dependent claim, if not paid                      |
| 1204     | 200      | 2204     | 100      | ** Reissue independent claims over original patent         |
| 1205     | 50       | 2205     | 25       | ** Reissue claims in excess of 20 and over original patent |

SUBTOTAL (2)

(\$)

0

\*\*or number previously paid, if greater; For Reissues, see above

## FEE CALCULATION (continued)

### 3. ADDITIONAL FEES

| Large Entity | Small Entity |
|--------------|--------------|
|--------------|--------------|

| Fee Code                  | Fee (\$) | Fee Code | Fee (\$) | Fee Description  | Fee Paid |
|---------------------------|----------|----------|----------|--|----------|
| 1051                      | 130      | 2051     | 65       | Surcharge - late filing fee or oath  |          |
| 1052                      | 50       | 2052     | 25       | Surcharge - late provisional filing fee or cover sheet                     |          |
| 1053                      | 130      | 1053     | 130      | Non-English specification  |          |
| 1812                      | 2,520    | 1812     | 2,520    | For filing a request for reexamination                                     |          |
| 1804                      | 920*     | 1804     | 920*     | Requesting publication of SIR prior to Examiner action                     |          |
| 1805                      | 1,840*   | 1805     | 1,840*   | Requesting publication of SIR after Examiner action                        |          |
| 1251                      | 120      | 2251     | 60       | Extension for reply within first month                                     |          |
| 1252                      | 450      | 2252     | 225      | Extension for reply within second month                                    |          |
| 1253                      | 1020     | 2253     | 510      | Extension for reply within third month                                     |          |
| 1254                      | 1,590    | 2254     | 795      | Extension for reply within fourth month                                    |          |
| 1255                      | 2,160    | 2255     | 1080     | Extension for reply within fifth month                                     |          |
| 1401                      | 500      | 2401     | 250      | Notice of Appeal   |          |
| 1402                      | 500      | 2402     | 250      | Filing a brief in support of an appeal                                     |          |
| 1403                      | 1000     | 2403     | 500      | Request for oral hearing   |          |
| 1452                      | 500      | 2452     | 250      | Petition to revive – unavoidable   |          |
| 1453                      | 1500     | 2453     | 750      | Petition to revive – unintentional   |          |
| 1501                      | 1400     | 2501     | 700      | Utility issue fee (or reissue)   |          |
| 1502                      | 800      | 2502     | 400      | Design issue fee   |          |
| 1460                      | 130      | 1460     | 130      | Petitions to the Commissioner  |          |
| 1807                      | 50       | 1807     | 50       | Processing fee under 37 CFR 1.17 (q)                                       |          |
| 1806                      | 180      | 1806     | 180      | Submission of Information Disclosure Stmt                                  | 180      |
| 8021                      | 40       | 8021     | 40       | Recording each patent assignment per property (times number of properties) |          |
| 1809                      | 790      | 2809     | 395      | Filing a submission after final rejection (37 CFR § 1.129(a))              |          |
| 1810                      | 790      | 2810     | 395      | For each additional invention to be examined (37 CFR § 1.129(b))           |          |
| 1801                      | 790      | 2801     | 395      | Request for Continued Examination (RCE)                                    |          |
| Other fee (specify) _____ |          |          |          |  |          |

\*Reduced by Basic Filing Fee Paid SUBTOTAL (3) (\$)

180

### 4. SEARCH/EXAMINATION FEES

|      |     |      |     |                         |  |
|------|-----|------|-----|-------------------------|--|
| 1111 | 500 | 2111 | 250 | Utility Search Fee      |  |
| 1112 | 100 | 2112 | 50  | Design Search Fee       |  |
| 1113 | 300 | 2113 | 150 | Plant Search Fee        |  |
| 1114 | 500 | 2114 | 250 | Reissue Search Fee      |  |
| 1311 | 200 | 2311 | 100 | Utility Examination Fee |  |
| 1312 | 130 | 2312 | 65  | Design Examination Fee  |  |
| 1313 | 160 | 2313 | 80  | Plant Examination Fee   |  |
| 1314 | 600 | 2314 | 300 | Reissue Examination Fee |  |

SUBTOTAL (4) (\$)

## SUBMITTED BY

| Name (Print/Type) | G. Gregory Schleyer<br>Bryant E. Wade | Registration No.<br>(Attorney/Agent) | 27382<br>40344 | Telephone | Complete (if applicable) |
|-------------------|---------------------------------------|--------------------------------------|----------------|-----------|--------------------------|
| Signature         |                                       |                                      |                | Date      | July 28, 2005            |

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.